Attention

The process through which certain stimuli are selected from a group of others is generally referred to as attention

attention also refers to several other properties like alertness, concentration, and search.

Alertness refers to an individual’s readiness to deal with stimuli that appear before her/him.

Concentration refers to focusing of awareness on certain specific objects while excluding others for the moment.

In **search** an observer looks for some specified subset of objects among a set of objects.

Classification of Attention

Divided Attention

Divided attention could be defined as our brain's ability to **attend to two different stimuli at the same time**, and respond to the multiple demands of your surroundings. Divided attention is a type of simultaneous attention that allows us to process different information sources and successfully carry out multiple tasks at a time. This cognitive skill is very important, as it allows us to be more efficient in our day-to-day lives.

Selective Attention

Selective attention is concerned mainly with the selection of a limited number of stimuli or objects from a large number of stimuli.

SHOUT
SHARE
IT

Factors Affecting Selective Attention

Several factors influence selective attention. These generally relate to the characteristics of stimuli and the characteristics of individuals. They are generally classified as “external” and “internal factors

External factors are related to the features of stimuli. Other things held constant, the size, intensity, and motion of stimuli appear to be important determinants of attention.

Internal factors lie within the individual. These may be divided into two main categories, viz. motivational factors and cognitive factors.

Motivational factors relate to our biological or social needs.

Cognitive factors include factors like interest, attitude, and preparatory set. Objects or events, which appear interesting, are readily attended by individuals. Similarly, we pay quick attention to certain objects or events to which we are favourably disposed.

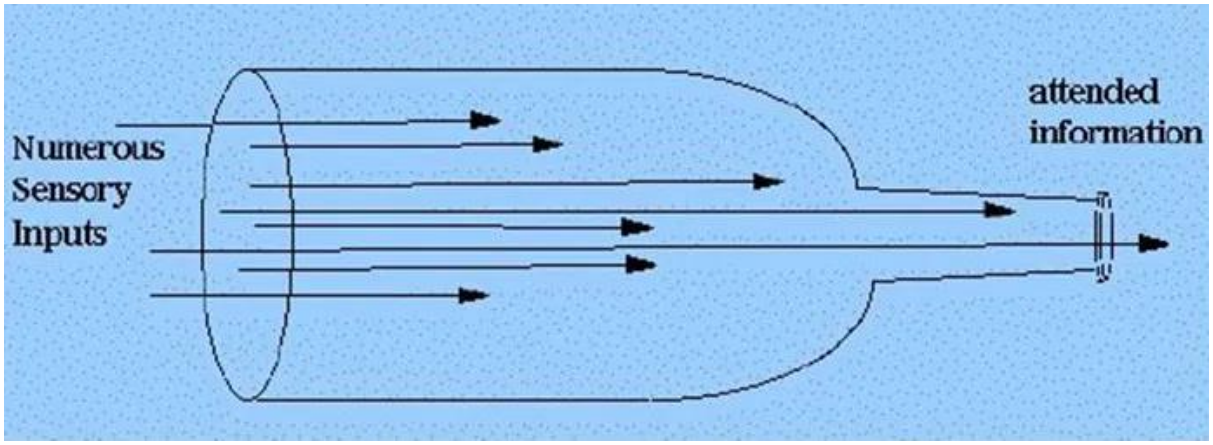
Automatic processing has three main characteristics;

(i) It occurs without intention,
(ii) It takes place unconsciously, and
(iii) It involves very little (or no) thought processes (e.g., we can read words or tie our shoelaces without giving any thought to these activities).

Theories of Selective Attention

Filter Theory (Broadbent, 1956)

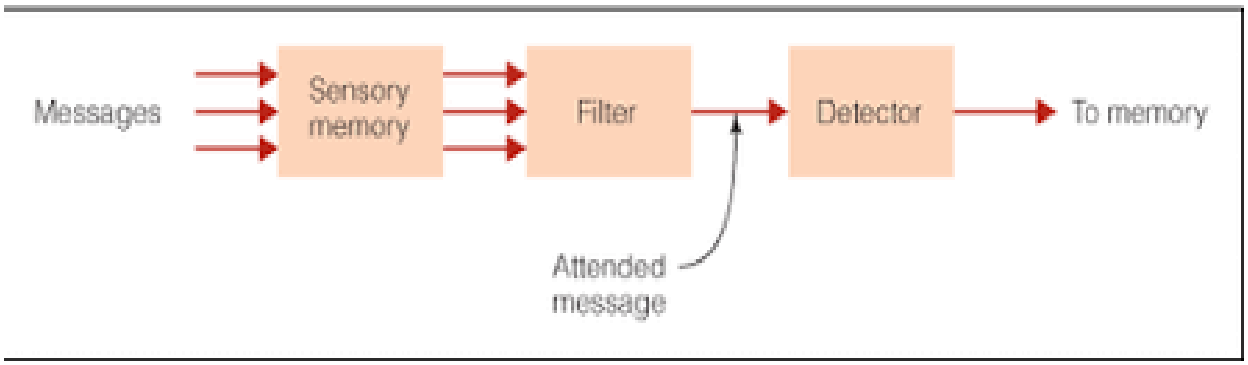
The limited capacity for paying attention has been conceptualized as a bottleneck, which restricts the flow of information. The narrower the bottleneck, the lower the rate of flow.



Broadbent's Attention model is bottleneck model because he predicted that we cannot consciously attend to all of our sensory input at the same time. Broadbent used an **information-processing** metaphor to describe human attention.
The model suggests that individuals have a limited number of attentional resources that they can use at one time. Therefore, information and stimuli are 'filtered' somehow so that only the most salient and important information is perceived.

Broadbent (1958) proposed that physical characteristics of messages (colour, loudness, tone, pitch) are used to select one message for further processing and that all others are lost.

Broadbent assumed that the filter rejected the unattended message at an early stage of processing. According to Broadbent the meaning of any of the messages is not taken into account at all by the filter. All semantic processing is carried out after the filter has selected the message to pay attention to. So whichever message(s) restricted by the bottleneck (i.e., not selective) is not understood.

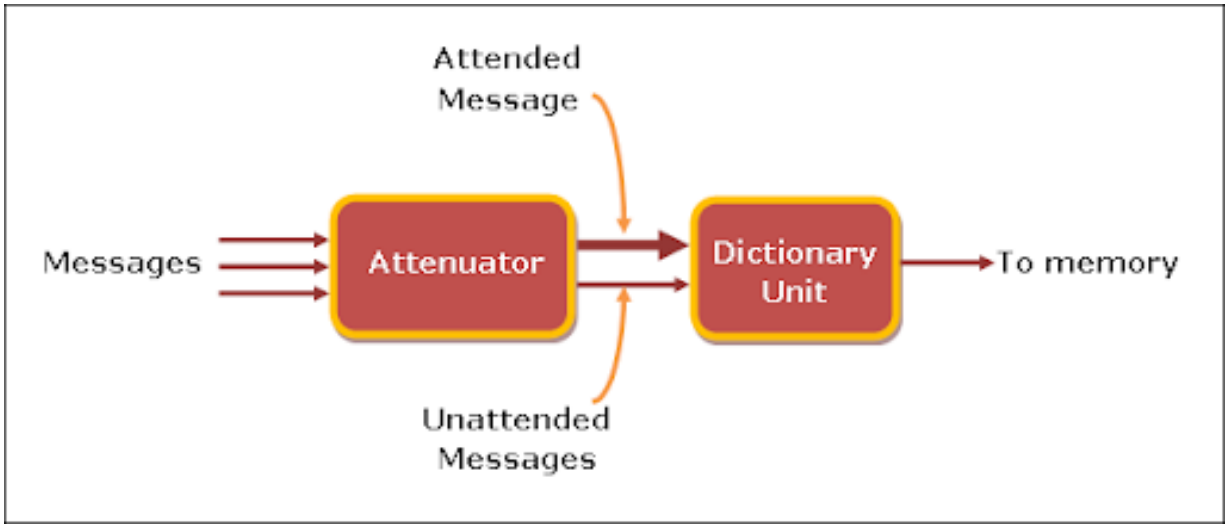


Treisman's Filter Attenuation Model

Treisman (1964) agrees with Broadbent's theory of an early bottleneck filter. However, the difference is that Treisman's filter attenuates rather than eliminates the unattended material.

Attenuation is like turning down the volume so that if you have 4 sources of sound in one room (TV, radio, people talking, baby crying) you can turn down or attenuate 3 in order to attend to the fourth.
This means that people can still process the meaning of the attended message(s).

In her experiments, Treisman demonstrated that participants were still able to identify the contents of an unattended message, indicating that they were able to process the meaning of both the attended and unattended messages.



Multimode theory

Multimode theory was developed by **Johnston and Heinz** (1978). This theory believes that attention is a flexible system that allows selection of a stimulus over others at three stages.

At stage one the sensory representations (e.g., visual images) of stimuli are constructed; at stage two the semantic representations (e.g., names of objects) are constructed; and at stage three the sensory and semantic representations enter the consciousness. It is also suggested that more processing requires more mental effort. When the messages are selected on the basis of stage one processing (early selection), less mental effort is required than when the selection is based on stage three processing (late selection).

Sustained Attention

It refers to our ability to maintain attention on an object or event for longer durations. It is also known as "vigilance". Sometimes people have to concentrate on a particular task for many hours.

Span of Attention

Span of attention refers to the amount of information an observer can grasp from a complex array of stimuli at a single momentary exposure. This can be determined by the use of an instrument, called "tachistoscope". On the basis of several experiments, Miller has reported that span of attention varies within the limit of seven plus or minus two. This is popularly known as the "**magic number".** It means that at a time, people can attend to a set of five to seven numbers, which can be extended to nine or more under exceptional conditions. That is perhaps the reason why motorbikes or cars are given a number plate that contains only four-digit numbers with some alphabets. In case of violation of driving rules, a traffic police can easily read and note these numbers along with the alphabets.

Covert and Overt Attention

Covert attention is **allowing the brain to attend to an object without moving the eyes toward that object**. Thus, the individual is paying attention, but it is in a way that is not readily apparent to anyone else.

overt attention is defined as **selectively processing one location over others by moving the eyes to point at that location**.